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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,403	12/21/2006	Anthony Jarvis	APLE 200016US01	8391
27885	7590	03/04/2010		
FAY SHARPE LLP 1228 Euclid Avenue, 5th Floor The Halle Building Cleveland, OH 44115			EXAMINER ZEMEL, IRINA SOPJIA	
			ART UNIT	PAPER NUMBER
			1796	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/599,403	<b>Applicant(s)</b> JARVIS ET AL.	
	<b>Examiner</b> Irina S. Zemel	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 January 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 49-78 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 49-78 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1-5-2010</u>  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 67-69 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed L\* value of “at least 54.47” encompasses a range of values that have not been ever disclosed or presented in the original specification for the compositions containing TiN. While some examples having L\* value of as low as 54.47 and as high as about 77 have been disclosed in illustrative examples. It is noted that the claimed range covers values substantially higher than ever presented or exemplified in the specification for the claimed compositions (which L\* values are substantially lower than values for embodiments not within the claimed invention as exemplified in table on page 28).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 49, 51-56, 59, 61, 63-64 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 4,176,101 to Leslie et al., (hereinafter "Leslie").

Leslie discloses a parison (a container pre-form) and a bottle made from a composition containing PET. See example 1, and the entire disclosure.

It is expressly noted that the claims as amended do NOT require the presence of TiN, as the claimed language "less than" does not positively claim any amount of the component, thus clearly reading on 0% .

The invention as claimed, therefore, is fully anticipated by the reference.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 49-62, 65, 66-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP patent 6-70165 (corresponding to JP Appl. 61-278558, translation provided) to Toray Industries, Inc., (hereinafter "Toray") in combination with US PGPub 2002/0009564 to Hall et al., (hereinafter "Hall '564").

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The rejection stands as per reasons of record. Specifically, as discussed in the previous office action, Toray discloses a compositions comprising polyethylene terephthalate (PET) and titanium nitride (TiN) . See the entire document. Toray discloses the particle size of TiN is preferably less than 5 um (5000 nm) and further expressly discloses particles with average particle size of 0.1 um (example 2), which is 100 nm, corresponding to the claimed particle size. The maximum particle size in the same illustrative example is disclosed as 0.8 micron (um) fully corresponding to the limitations of claims 52,53. Insofar as the limitations of newly added claims 65 and 66, it is noted that the average particle size of the particles used in example 2 is 100 um. It is further noted that as measured in a slurry, the particle size is 0.12, which is slightly higher than the claimed 0.1. However, the claimed particle size is based on the actual particle size of the filler itself, and not the particle size of the filler in the composition, which may be agglomerated or modified somehow upon mixing with the polymer. As evidence from the applicants disclosure on page 12, the claimed particle size is the particle size of the original TiN. This is also evident from the examples, where the particle size is measured prior to mixing (via slurry or other steps) with the polymer. Thus, the claimed particle size is met by the disclosure of the reference. In addition, the claims do not require the entire TiN present in the polymer composition to exhibit the claimed average particle size. Among the added Ti N disclosed in the reference, obviously, there is at least some portion that exhibits the claimed average particle size. And lastly, even if, arguendo, the reference discloses the particle size which is slightly higher than the claimed, the

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disclosed size is close enough to the claimed size so that the properties of the resulting product are expected to be similar in the absence of showing of unexpected results as per *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985).

The reference does not expressly disclose that the maximum particle size of 95 % being less than 0.5  $\mu\text{m}$ , however, such dimensions (if not inherent in the particles of example 2) are closely correspond to the disclosed sizes and would have been further obvious from the disclosure of average size of 100  $\mu\text{m}$  and maximum size of 800  $\mu\text{m}$ , and also from overall disclosure of the references that discloses preference to small particle size in the absence of unexpected results that can be attributed to such particle size distribution. The reference further expressly discloses that TiN can be added in the amounts as low as 0.05 % by weight (or 500 ppm) which fully correspond to the claimed amount of TiN in the composition or with respect to PET polymer. The reference expressly discloses various advantages of the compositions, including improved slip properties and anti-blocking properties.

Insofar as the claimed properties, while the properties of the compositions containing 1% of TiN are different from the claimed properties, the reference, as discussed above, expressly discloses that the advantages can be realized by adding as little as 100ppm of the TiN filler. Therefore, the properties of the compositions containing smaller amounts of filler which smaller amounts are within the expressly disclosed suitable ranges, are reasonable expected to

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exhibit the claimed properties as being substantially identical to the claimed compositions.

The reference disclosed films, yarns and generically, other molded articles, but does not expressly disclose bottles, or container (or pre-forms), i.e., the reference exemplifies final products of different shapes.

However, it is well known in the art that same PET based compositions are used for production of wide variety of end products, such as films or bottle/container pre-forms (and containers made from such pre-forms), as evident from, for example, background section of Hall '564, which discloses such end uses for PET compositions. Hall further discloses that "improved slip" characteristics are desirable for forming bottle preforms, and this is exactly the characteristic which is disclosed as improved in the invention of Toray '558. Therefore, it would have been obvious for one of ordinary skill in the art to use PET based compositions of Toray for making containers/preforms since it is known in the art to use same PET based compositions for production of films and bottles, and since the composition of Toray exhibits characteristics desirable for compositions used for bottle forming. In addition, the reference expressly discloses that fillers used for their slip function are usually added in much smaller (by an order of magnitude) amounts as compared to the amounts used in Toray for color function, thus further providing support that the compositions with smaller amounts of filler would have been obvious, and, as having smaller amount of filler, would have inherently exhibiting the claimed properties.

Insofar as the claimed process, once the PET disclosed in Toray are chosen for forming bottle/container pre-forms (as an obvious choice of an ordinary artisan as discussed above), the steps claimed in the instant claims 61-62 would have been obvious as the most common steps in producing PET based bottles. See, again, for example, disclosure of Hall expressly teaching that the method steps as claimed in the instant invention are the most common steps for producing PET bottles. The properties of the perform is inherently corresponds to the claimed properties as made from identical materials. The process of "improving reheat properties" does not recite any additional steps that distinguishes the claimed process from the process of making a preform of claim 61 or any other preform with the only difference of choosing the claimed composition. Obviousness of choosing the claimed composition for its superior slip properties, for example, is expressly discussed above. Simple because such compositions inherently improve some other characteristics of the same process or the composition does not render the process/composition patentable. Ee, for example, *In re Wiseman*, 596 F.2d 1019, 201 USPQ 658 (CCPA 1979).

The invention as claimed, therefore, is still considered to have been obvious from the combined teachings of the prior art.

### ***Response to Arguments***

Applicant's arguments filed 12-7-2009 have been fully considered but they are not persuasive. The applicants argue that Toray is directed to "providing "black spin-dyed polyester compositions...having excellent surface uniformity and having light-blocking properties." (See paragraph 1, page 2 of the



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translation). Toray compares the invention to the use of carbon black and suggests that the compositions of Toray may be used "for black spin-dyed threads, black spin-dyed films and light-blocking films that have excellent surface characteristics and only a few dropouts and other defects." (Page 5, point 3)."

While all of the quotations cited by the applicants are, indeed, cited in the Toray reference. The disclosure of the reference is not limited to just the applications cited by the applicants. The reference expressly discloses that the inventive compositions are suitable for molded articles (notably neither fibers nor films are "molded articles"), and the composition provides advantages when used in molding operations by not clogging the molding machines. See page 4, last two paragraphs. Therefore, the reference not only teaches suitability of the disclosed composition for production of molded articles, it expressly discloses advantages of such compositions for use in molding process. (See also general discussion on page 2 regarding necessary addition of fillers to make the PET slippery for molding, for example, which can be achieved by addition of TiN as per the Toray invention).

The applicants further argue that Toray is not concerned with providing a reheat agent and rather stresses the light blocking and/or blackness of the films produced. Once again, the disclosure of the reference is not limited to just black films. In addition, it is immaterial to the patentability of a composition whether or not the prior art disclosed or even recognized some advantageous properties of the composition. Mere recognition of latent properties in the prior art does not render nonobvious an otherwise known invention. *In re Wiseman*, 596 F.2d 1019,

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201 USPQ 658 (CCPA 1979). It is, therefore, immaterial whether one of ordinary skill in the art would be motivated to use TiN as a reheat agent. The claimed composition still is identical as those disclosed by Toray and its use for containers (an example of a specific molded article) would have been obvious in view of the teachings of the secondary reference as discussed in the previous office action.

The applicants further argue that Hall is directed to a transparent performs, which is exactly opposite to the black, low transparence compositions of Toray. The applicants state that "Hall focuses heavily on the additives' effect on optical properties. Hal is clearly not only concerned with slip performance, but is also concerned with providing additive having appropriate optical properties. In this regard, Hall discloses amides that "haw a negligible effect on color," additives that do not produce "objectionable levels of haze," and provides extensive color measurement results. (See paragraphs [0013], [0016] and [0060])." Again, while the quoted paragraphs are, indeed, disclosed in the reference, the applicants have chosen to only concentrate on one part of the disclosure of the reference, not the entire disclosure of it, and not the portions of the teachings relied upon by the examiner. Improved slip properties are expressly disclosed as desirable properties for making pre-forms, and that is the teachings relied upon by the examiner, in combination with the teachings that similar PET compositions are commonly used for films and bottle production. The examiner agrees that color characteristics are very important fro performs, although it is noted, that the majority of the claims are NOT limited to bottle pre-

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forms, but claim container or perform for a container, which language encompasses ANY container. Obviously, while slip characteristics are still important for any molded operations, color or transparency is not, and may not even be a desired characteristic for a container for a given application, where light blocking characteristics (like a medicine bottle) are important. But even more important, that as noted by the applicants themselves, Hall, when using an additive for its known anti-blocking function or as a slipping agent, uses significantly smaller (by an order of magnitude) amount of such additive, as compared to the amounts of additive, when it is used for its function as colorant. Therefore, it is clear that using much smaller amounts of slip agent type additive, (when using the novel additive disclosed for its anti-blocking or slip characteristics as per expressed teachings of Toray) will result in composition having better color characteristics.

As evident from the enclosed article by Bishop, the problems associated with adding anti-blocking and slip additives (such as silica disclosed in Toray, and other inorganic fillers, they significantly affect the optical property of a transparent polymer and significantly increase haze when added even in a very small amounts. The article discusses that it is a very well known problem, and also states that there is balance between the ease of handling an optical performance. Therefore, one of ordinary skill in the art would have been clearly aware of such property/amount balance, and would be able to optimize the amounts of a given filler to achieve the desired combination of characteristics. Since, as expressly disclosed by Toray, as little as 100 ppm of TiN already

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suitable for the invention and already brings about the desired effect, and in view of the general knowledge of the above discussed desire to balance the characteristic as discussed by both Bishop and Hall. the claimed amounts of TiN filler would have been obvious for an ordinary artisan to achieve the composition with overall balance properties. (Noted that the amounts as low as 25 ppm are not disclosed in any of the reference, but none of the claims requires this amount).

With respect to the applicants arguments that the reference does not disclose the particle size of 100nm or less, this argument is not well taken. The reference expressly discloses use of TiN of a particle size of 0.1 um in example 2. The reference the discloses measuring the particle size distribution in slurry, which is added to the reaction mixture. There is no evidence, however, that the particle size in the final polymer/particle mixture is any different from the original size of the particles used at the beginning of the experiment. It is further noted that the claimed particle size in the instant application refers to the particle size of the particles used before it is being mixed with the polymer (as referenced by the applicants to the disclosure on page 12) as discussed above.

Also, as discussed above, the properties of the compositions containing smaller amounts of TiN as optimized for its use as slipping agent is expected to inherently exhibit all of the claimed properties.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.**

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See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irina S. Zemel whose telephone number is (571)272-0577. The examiner can normally be reached on Monday-Friday 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571)272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Irina S. Zemel/  
Primary Examiner, Art Unit 1796

Irina S. Zemel  
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Art Unit 1796

ISZ